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A SWEDISH VERSION OF THE ENVIRONMENTAL RESPONSE INVENTORY

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PREFACE

In Sweden today, about one person in five is retired. Actually, many will spend as much as a quarter of their total life span as pensioners. Of those who retire the great majority are vigorous and healthy. Still, growing old does involve a difficult adjustment process, both psychologically, physiologically and socially.

This report is one in a series concerned with the psychological consequences of retirement. It also constitutes the first part of a forthcoming PhD-thesis in psychology. In this respect it signifies a cooperative effort between the Department of Psychology, Lund University, and the Environmental Psychology Unit at the Lund Institute of Technology.

The study was supported through a graduate scholarship from the Department of Psychology. As part of the larger research project: Housing, work and leisure in the upper age groups, it was also supported by a grant from the Swedish Building Research Council.

I would like to express sincere thanks to the following persons who have helped the project in various ways. For providing testing facilities thanks are due to the Social Welfare Departments in Karlskrona and Malmö; for administrative and practical help at the testing locations, Gerd Hallberg and Berit Mattisson in Malmö and Margit Ottosson and Viola Andersson in Karlskrona; and finally the project reference group consisting of Assar Andersson and Görit Salomonsson, Karlskrona, Hans Blücher and Holger Granath, Malmö, Margreth Johansson, Yngve Lundqvist, Gudmund Smith and Owe Ahlund, Lund, Gillis Samuelsson, Dalby and Carin Boalt, Stockholm.

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SAMMANFATTNING

Watzke, J. R. 1986. En svensk version av Environmental Response Inventory. Miljöpsykologiska Monografier Nr. 3. Sektionen för Arkitektur, Tekniska Högskolan i Lund (51 sidor, Engelska) ISSN 0280-8269.

Ett försök har gjorts att anpassa McKechnies Environmental Response Inventory (ERI) för svenska förhållanden. Med hjälp av korrelations- och faktoranalys visade det sig möjligt att replikera sex av det ursprungliga formulärets åtta miljöskalor. Dessa var Stimulus Seeking, Urbanism, Antiquarianism, Mechanical Orientation, Need for Privacy och Environmental Trust. Den svenska versionen omfattar ungefär hälften av det amerikanska formulärets ursprungliga antal item (påstående). För de sex svenska skalorna redovisas preliminära valideringsdata från ett urval bestående av universitetsstuderande, yrkesarbetande och pensionärer (N=313). I huvudsak överensstämde de svenska resultaten avseende demografiska skillnader (ålder och kön) samt utbildning och yrke med såväl de amerikanska resultaten, som med resultaten av en tysk studie utförd av Espe 1984. För pensionärsgruppen (N=115) redovisas också signifikanta samband mellan ERI-värden och andra psykologiska data (bl a personlig anpassning, Eysenck Personality Inventory samt kognitiv kompetens). Huvuddelen av dessa samband har kunnat tolkas på ett teoretiskt meningsfullt sätt, vilket tyder på att den svenska versionen av ERI kan komma att bli ett användbart instrument i miljöpsykologiska sammanhang.

ABSTRACT

Watzke, J. R. 1986. A Swedish version of the Environmental Response Inventory. Environmental Psychology Monographs No. 3. School of Architecture, Lund Institute of Technology, Lund, Sweden. (52 pages) ISSN 0280-8269.

An attempt was made to adapt McKechnie's (1974) Environmental Response Inventory (ERI) to Swedish conditions. Using both correlational and factor analysis, six of the original instrument's eight environmental scales were replicated. These were Stimulus Seeking, Urbanism, Antiquarianism, Mechanical Orientation, Need for Privacy and Environmental Trust. The resulting Swedish scales retained approximately half the number of original items. Focusing on the six replicated scales, data from a mixed sample (university students, various occupational groups, and retirees, N=313) is presented as a beginning validation of the Swedish version. Swedish ERI results for demographic variables (age and sex) as well as educational/vocational background were for the most part in agreement with American ERI data and German ERI data (Espe 1984). For the subsample of retirees (N=115), significant correlations between ERI scores and other psychological data (e.g., personal adjustment, Eysenck Personality Inventory, and cognitive competence) are presented; most of these results are claimed to make rational and theoretical sense and are thereby taken as evidence of the potential fruitfulness of the adapted Swedish scales.

INTRODUCTION

One important task of a newly developed scientific field is to produce instruments which have special utility to the research paradigms of the field. Craik was one of the first to try to organize in publication the fast growing field which is today known as environmental psychology (1970 a).

The Environmental Response Inventory (ERI*) was developed by McKechnie (1974) during this same time. It was intended to be an instrument tailored to investigate questions connecting personality and the environment as conceptualized in environmental psychology. Briefly stated, this meant paying more attention to the ecological perspective, or variables from the physical environment in the study of behavior than was being done in the more established fields of psychology.

The Manual for the ERI gives a thorough description of all aspects of development of the instrument so only the barest details will be outlined here. According to the manual "The ERI consists of a set of 184 statements tapping attitudes toward a wide array of environmental themes, including conservation, recreation and leisure activities, architecture and geography, science and technology, urban life and culture, aesthetic preferences, privacy, and adaptation" (McKechnie 1974, p. 1). The responses to the items are scored on 9 scales, 8 of which are referred to as 'environmental dispositions', plus one validity scale. The scales and their major themes are described in the manual as follows:*

ET (Environmental Trust). General environmental openness, responsiveness, and trust; competence in finding one's way about the environment vs. fear of potentially dangerous environments; security of home; fear of being alone and unprotected.

AN (Antiquarianism). Enjoyment of antiques and historical places; preference for traditional vs. modern design; aesthetic sensitivity to man-made environments and to landscape; appreciation of cultural artifacts of earlier eras; tendency to collect objects for their emotional significance.

UR (Urbanism). Enjoyment of high density living; appreciation of unusual and varied stimulus patterns of the city; interest in cultural life; enjoyment of interpersonal richness and diversity.

EA (Environmental Adaptation). Modification of the environment to satisfy needs and desires, and to provide comfort and leisure; opposition to governmental control over private land use; preference for highly designed or adapted environments; use of technology to solve environmental problems; preference for stylized environmental details.

SS (Stimulus Seeking). Interest in travel and exploration of unusual places; enjoyment of complex and intense physical sensations; breadth of interests.

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PA (Pastoralism). Opposition to land development; concern about population growth; preservation of natural resources, including open space; acceptance of natural forces as shapers of human life; sensitivity to pure environmental experiences; self-sufficiency in the natural environment.

NP (Need for Privacy). Need for physical isolation from stimuli; enjoyment of solitude; dislike of neighboring; need for freedom from distraction.

MO (Mechanical Orientation). Interest in mechanics in its various forms; enjoyment in working with one's hands; interest in technological processes and basic principles of science; appreciation of the functional properties of objects.

CO (Communality). A validity scale, tapping honest, attentive, and careful test-taking attitude; response to items in statistically modal manner.

The derivation of these scales was of course a detailed process based on test theory and construction, and once again, interested readers should refer to the manual for the complete description. One detail about the creation of the scales worth mentioning is that they were not constructed primarily via factor analysis. Factor analysis of the scales was used more as an exploratory tool to arrive at meaningful constructions to base the scales on and afterwards to check or confirm the derived scales which were based on a method of multijudge rational keying. In other words, a panel of experts was given a set of constructs, e.g., Pastoralism, Urbanism, Environmental Trust, etc., and were asked to assign each of the items to one of these given constructs or environmental dispositions. These expert judgements of item-construct association formed a set of tentative scales which were then treated to various item-scales correlational analyses allowing the necessary revision and shortening of the scales. Finally, these 'rationally keyed' scales were treated to conventional factor analyses to see if indeed the rational scales agreed with the scales generated by factor analysis. In fact, the agreement between the two scaling methods was very high except in the cases the Pastoralism and Antiquarianism scales which upon factor analysis combined to form one factor.

The decision to create a Swedish version of the ERI was based on three things. First, and most importantly, the ERI was purported to be "... an assessment instrument having value for interdisciplinary studies of man and environment; and any other disciplines concerned with the patterns and styles of response which individuals manifest with respect to their environments." (McKechnie 1974, p. 1) At our research unit we have developed and/or translated other instruments particularly relevant to studies of man-environment behavior (see for example, Küller 1972, 1977) and have a continuing interest in expanding our selection of instruments. The ERI was especially attractive because it was clearly intended to be a tool for personality assessment yet at the same time it could provide useful information about more simple questions, e.g., the measurement of people's environmental attitudes. The second reason for wanting to develop a Swedish ERI was that we were aware of a group of researchers in West Germany (Krampen,

Dem Venne & Espe 1982) who were undertaking the adaptation of the inventory to German conditions. The potential to compare efforts on this matter encouraged us to follow through with the project. Throughout this paper comparisons between these two research efforts will be taken up. Lastly, the present author was a student at the Department of Psychology, U.C. Berkeley, where the ERI was developed at the time when the inventory came into official research use and therefore felt a slight advantage in adapting the inventory to Swedish conditions.

From the point of view of test construction the translation and adaptation of any self-report inventory is a risky endeavor. Publication space in most journals is so limited that details of many of the initial problems of translating inventories are not reported. This is unfortunate because there is much to be learned from the linguistic stage of adapting an inventory. It is in the actual translation one first meets the problems of cultural differences and the more theoretical questions of adapting an inventory. For example, since the ERI is based very much on statements about the physical environment, one has to consider such issues as how similar attitudes and behaviors are in persons across cultures as compared to how similar the physical environments are of the two cultures.

Before discussing the translation problems encountered, a few reservations will be made. First, the original ERI was felt to be too long. The first intended use of the Swedish version was to include it in a four to five hour testing battery which was to be given to a group of Swedish retired persons (Watzke 1986). It was felt that the non-threatening content of the ERI items would make them less susceptible to many of the problems encountered in traditional personality inventories, e.g., response sets. With this in mind, it was decided to eliminate the validity scale (Communality).

Second, it was felt that many of the ERI items were better suited for testing younger persons, say, under the age of 30. According to the ERI manual (p. 8-10), that stage in the construction of the scales where the item pool was reduced from around 330 to the final pool of 184 was based on item-scale correlations from a sample of 1 334 persons, of which 939 were undergraduate students from various universities in the U.S. and Canada. Although the manual does not state so, it is also assumed that the confirmatory factor analysis of the final item pool was done from this sample. No mean age is given from this sample, but we would guess that 70% of the sample (the undergraduates) must average no more than 22 years. Since we desired as an end result a translated version of the inventory which would be fruitful even with samples of retired persons, we were prepared to discard those items that seemed more focused on the attitudes of young persons.

STEP 1: TRANSLATION OF THE ITEMS

The translation of the original 184 items was done primarily by the present author and two Swedish persons.* The general policy of translation was to follow the American wording as closely as possible, but most importantly, to capture and retain the meaning of each item. This was not an objective process but those items which were more problematic were shown to other persons, including a retired couple, and eventually an agreed upon translation was arrived at. Throughout the translation stage notes were kept concerning the impression and problematic nature of items with respect to language as well as psychological and cultural content. In some ways this is a simplified version of how we imagined the U.S. expert judges assigned items to the given scales. The categorization of translation problems is culturally instructive and is presented below.

Basically, the problems fell into four categories. The first and largest category was labeled 'U.S. culture'. Here certain items were felt to be too culturally specific, especially with regard to differences between the U.S. and Sweden in crime, property rights, and the scale of environmental problems. Examples of these items are: "There should be a law against skyscrapers" (15); "There should be a law against anyone owning more than a thousand acres of land" (42); "Building projects which disrupt the ecology should be abandoned and the land returned to its natural state" (127); "I usually avoid public restrooms" (133); and "Trespassing laws should be more carefully enforced" (140). There were also some items which in a more general sense point to cultural differences between the U.S. and Sweden: "I prefer a stickshift car to one with an automatic transmission" (23); "Birth control practices should be accepted by everyone" (113); and "It's nice to buy a new car every year or so" (166).

The second problem category contained items which seemed to be too 'abstract', either in language or idea. Not surprisingly, many items from this category came from the Pastoralism and Environmental Adaptation scales, scales based on constructs which are more complicated to understand. Some examples of these items are: "I often feel that I am a part of the space around me" (63); "A person has a right to modify the environment to suit his needs" (88); "Fences make good neighbors" (94); "Sometimes I wish I had power over the forces of nature" (110); and "It is important for me to feel I am in harmony with the forces of nature" (146).

The third category was labeled 'youth bias' and for the most part had items coming from the Stimulus Seeking scale, e.g., "I would enjoy driving a racing car" (5); "I enjoy staying up all night" (74); "I don't think I ever want to be hypnotized" (84).

The last category contained items which seemed to involve problems of language and wording. Some of the items simply seemed too 'reactive'

* Special thanks to Kristina Hansson, architecture student, and Agneta Ståhl, environmental and traffic researcher.

in nature, for example, "Country people are more honest than city people" (99); "Modern communities are plastic and ugly" (148); "Computers may someday take over the world" (175); and "The wilderness is cruel and harsh" (122). Although helpful in anticipating which items might be less useful for Swedish conditions, the noting and categorization of problematic items presented above was not considered an appropriate basis for elimination of items. For the time being, all the U.S. items were retained pending the statistical analyses presented below.

STEP 2: ITEM-SCALE CORRELATIONAL ANALYSIS

After completing the translation it was decided to proceed by conducting a correlational analysis* looking for the largest and most frequent inter-correlations among those items which formed the scales in the American ERI (except the validity scale). It was decided not to attempt any factor analysis or correlational analysis on the 164 items as a whole at this stage. This meant we were basically accepting the validity of each of the American scales as offered with the intention of trimming away those items which the translation process led us to believe might not be applicable in Sweden.

A sample of 71 persons were given the translated version (164 items). This sample consisted of 20 architecture students, 16 graduate students in psychology, 18 persons (age < 50) from miscellaneous backgrounds, and 17 older persons (age > 50) from various non-professional backgrounds. The sample had 40 females and 31 males and the mean age was 42 years.

The inter-item correlations for each scale were inspected and those items having the greatest number of correlations ($r > .28$) with the other items in its scale were selected. In most scales this resulted in a group of around ten or eleven items which averaged between seven and ten acceptable inter-item correlations (out of a maximum possible of the total number of items in each American scale minus 1, i.e., between 18 and 21). The one exception was the Environmental Adaptation scale which had markedly fewer inter-item correlations above the .28 cutpoint (an average of 3.4 for its ten best items).

Next, these items with the greatest number of inter-item correlations were placed into their respective scale's matrix and inspected for manifest content, conceptual fit with the scale, etc. In a few cases items were eliminated or exchanged for items which may not have had as many correlations greater than .28 but had fewer very low correlations with the newly selected preferred subsample of items for each scale.

At the same time, it was decided to discard the items from the Environmental Adaptation scale from the further development of the Swedish version of the ERI. This decision was supported by the West German effort which after a factor analysis reported a significant loss of

* BMDP program P8D - correlations with incomplete data. The corpair method was used, the r computed is the product-moment correlation coefficient (Dixon 1981, p. 209).

items from the EA scale (Seiwart & Krampen 1984, p. 6). Furthermore, in contrast to the German researchers, it was decided not to rewrite items to fit Swedish conditions nor create totally new items which might 'fill out' the shortened American scales (please refer to Appendix 1 for a list of the discarded items from each scale). Unfortunately, we were not able to obtain statistics from the original ERI which would enable us to judge if the items being retained in the Swedish version were among the 'stronger' items (either in terms of the rational keying, inter-item correlations, or factor analysis) in the final American scales. We were, however, content to see that almost every item which had been noted in the translation stage as problematic did not make it into the 77 item pool resulting from the correlational analysis.

STEP 3: FACTOR ANALYSIS (77 ITEMS)

During the next year, various groups were given the shortened Swedish inventory. Later, the specific characteristics of the total sample will be presented; for now it can be said that 313 persons filled in the form. This group was comprised of 115 retired persons (37%), 114 undergraduate and graduate university students from three different study majors (36%), and 84 persons from various working groups, mostly school teachers, engineers, and secretaries (27%). The sample contained 150 males and 157 females (6 subjects with missing data) with an age range from 20 to 75 years, the mean being 45.

To begin with, a group of factor analyses* were performed, both orthogonal and oblique, and six of the seven remaining American scales were consistently identified as factors. The exception was Pastoralism**. A search for the PA items showed that three had loaded in Stimulus Seeking, and one had a high loading in Environmental Trust. The remaining six PA items had multiple loadings but five of the six had at least one loading greater than .25 in the factor Antiquarianism. This fit with McKechnie's findings where PA and AN combined under factor analysis (McKechnie 1974, p. 9, 10) and correlated .50 (p. 24, Table 6).

Based on these initial factor analyses, it was decided to eliminate 12 of the 77 items. The six Pastoralism items which loaded primarily in Antiquarianism (as well as other factors) were removed because there existed better items for the AN factor and more importantly those items seemed conceptually separate from what was apparently going to become the Swedish version of Antiquarianism, i.e., anti-quarianism without a nature theme. Finally, six other items were discarded (two each from Antiquarianism, Stimulus Seeking, and Environmental Trust) because of low factor loadings and/or loadings dispersed among more than one factor. A good example is item 124

* See BMDP program P4M (Dixon 1981, p. 480).

** Seiwart and Krampen also reported a significant loss of Pastoralism items in their factor analyses with the German sample (1984, p. 6).

(SS in the American ERI): "I like experimental art", which in the Swedish analyses had low loadings in four factors (SS, AN, UR, NP).

STEP 4: FACTOR ANALYSES ON THE FINAL ITEM POOL (65 ITEMS)

Using the new selection of 65 items, factor analyses were performed and the best solution (orthogonal) yielded seven factors which accounted for 47% of the total variance in the material*. The first six factors accounted for 43% of the total variance and were clearly identified as the six American scales, Stimulus Seeking, Urbanism, Antiquarianism, Mechanical Orientation, Need for Privacy, and Environmental Trust. Each of these factors will be presented and discussed with special emphasis being given to any item shifting which may have occurred between the abbreviated American scales and the Swedish factors. Item-factor loadings less than .30 are not presented (the total factor matrix contained fewer than ten values greater than .25 but less than .30).

Factor 1: Stimulus Seeking (SS)

This factor is similar to others which appear on psychological self-report inventories, see for example, Zuckerman (1971), and Mehrabian and Russel (1974). An examination of Table 1 reveals a good agreement between the American and Swedish items for this factor; the single exception is item 22 "Alleys are interesting places to explore", which shifted to the Swedish factor for Antiquarianism. An explanation for this will be offered when the Antiquarianism factor is discussed later. Four other items were added to the Swedish SS factor, three of them coming from the American scale Pastoralism. For this particular Swedish sample it appears that environmental experiences out in nature are best connected to a disposition of adventure and stimulus seeking. Lastly, a loading for item 68 "Flying in a small airplane would make me nervous" appeared and makes sense since that item is almost the opposite to item 152 "I would like to take flying lessons" which is also in the Stimulus Seeking scale. In conclusion it seemed important to inspect those retained items from Table 1 and the discarded items in Appendix 1 to see if any important themes or components from the American scale had been lost. On this point, it is worth pointing out, with a degree of irony, that a portion of the most youth oriented American items had been taken away (5, 18, 74, 84), yet three new youth oriented items had been added in the Swedish scale, (6, 169, 183).

* McKeechie (1974, p. 10) reported a 7 factor solution with 150 items and all 8 of the American scales identifiable accounting for 68% of the total communality. Espe (1984, p. 8) reported the German 7 factor (5 U.S. scales identified) solution based on 164 items which accounted for 28.8% of the total variance.

Table 1. *Items and their factor loadings for the Swedish "Stimulus Seeking" factor (accounts for 8.6 percent of the total variance in a 7-factor solution with orthogonal rotation, N=313). Overlapping loadings appear in parentheses.*

U.S. scale	No.	STIMULUS SEEKING	Swedish loadings
SS	141.	I am an adventurous person.	.68
SS	176.	I like to be on the move, not tied down to any one place.	.65
SS	152.	I would like to take flying lessons.	.61
SS	170.	I enjoy being in dangerous places.	.61
SS	72.	I would enjoy riding a motorcycle.	.59
SS	174.	I would enjoy living on a houseboat.	.58
SS	48.	I would like a job that involved a lot of travelling.	.57
SS	21.	I would enjoy traveling around the world on a sailing ship.	.57
SS	12.	It would be fun to move around and live in different parts of the country.	.53
SS	106.	I like to ride on roller coasters.	.49
PA	183.	I would rather sleep on the open ground than in a tent.	.49
ET	68.	Flying in a small airplane would make me nervous.	-.48 (.43 ET)
PA	6.	The idea of walking into the forest and "living off the land" for a week appeals to me.	.45
SS	163.	I would like to live in a palace or a castle.	.43 (.32 AN)
PA	169.	I would like to build a cabin in the woods.	.39 (-.32 UR)
SS	22.	Alleys are interesting places to explore.	(see Antiquarianism, table 3)

Factor 2: Urbanism (UR)

Table 2 shows that all eleven items entered from the original UR scale came out in the Swedish factor. Two of those items (14, 158) also loaded highly in the Swedish Antiquarianism factor. Two new items, 144 "It is dangerous nowadays to live in a large city" and 169 "I would like to build a cabin in the woods" obtained negative loadings in this factor and were welcomed because of their conceptual fit with this factor.

Table 2. *Items and their factor loadings for the Swedish "Urbanism" factor (accounts for 8.1 percent of the total variance in a 7-factor solution with orthogonal rotation, N=313). Overlapping loadings appear in parentheses.*

U.S. scale	No.	URBANISM	Swedish loadings
UR	81.	I would enjoy living the rest of my life in a large city.	.79
UR	7.	Life in the city is more interesting than life on a farm.	.75
UR	165.	The cities contain the best aspects of modern life.	.69
UR	38.	Cities are too noisy and crowded for me.	-.68
UR	51.	I like the sound of a city street.	-.67
UR	26.	I like the variety of stimulation one finds in the city.	.62
UR	171.	Everyone should have the opportunity to live in a great city.	.60
UR	14.	It is exciting to go shopping in a large city.	.47 (.39 AN)
UR	158.	The cultural life of a big city is very important to me.	.46 (.52 AN)
UR	85.	Small-town life is too boring for me.	.46
UR	95.	I'd rather live in the suburbs than in the city.	-.43
ET	144.	It is dangerous nowadays to live in a large city.	-.38 (.47 ET, .34 NP)
PA	169.	I would like to build a cabin in the woods.	-.32 (.39 SS)

Finally, upon comparison of the retained and discarded items for this scale (Table 2 and Appendix 1), it was concluded that the Swedish factor had preserved the two most important themes of Urbanism, i.e., stimulation from the city and issues of high or low density living. It was disappointing however to discard the items "Country people are more honest than city people" (99) and "Mental problems are more common in the city than in the country" (177) because those are the only items which make direct assumptions about the personal character of urban versus rural inhabitants.

Factor 3: Antiquarianism (AN)

As the label suggests, this scale is focused on attitudes of old versus new, traditional versus modern design, and appreciation of the history

Table 3. *Items and their factor loadings for the Swedish "Antiquarianism" factor (accounts for 8.0 percent of the total variance in a 7-factor solution with orthogonal rotation, N=313). Overlapping loadings appear in parentheses.*

U.S. scale	No.	ANTIQUARIANISM	Swedish loadings
AN	19.	I like places that have the feeling of being old.	.73
SS	22.	Alleys are interesting places to explore.	.66
AN	112.	I like to read about the history of places.	.65
AN	109.	I would enjoy living in a historic house.	.63
AN	11.	I enjoy browsing in bookstores.	.62
AN	116.	I would enjoy going to the opera.	.61
AN	17.	I enjoy browsing in antique shops.	.58
AN	111.	I have no interest in ballet.	-.56
UR	158.	The cultural life of a big city is very important to me.	.52 (.46 UR)
AN	105.	I am quite sensitive to the "character" of a building.	.50
AN	173.	Old buildings are usually depressing.	-.43 (.43 ET)
UR	14.	It is exciting to go shopping in a large city.	.39 (.47 UR)
SS	163.	I would like to live in a palace or a castle.	.32 (.43 SS)

in places and events. Nine items from the original American scale were entered into the factor analysis and all nine items received acceptably high loadings in this factor (Table 3). An additional four items loaded here, three of which relate quite clearly to urban experiences: "It is interesting to go shopping in a large city" (14), "Alleys are interesting places to explore" (22) and "The cultural life of a big city is important to me" (158). The inclusion of these three new items gives this factor a stronger urban quality and seems to contain items mostly concerned with active experiences in the environment, e.g., browsing in shops, living in houses, exploring alleys, and going to the ballet or opera. This makes sense because it is in the urban environment where experiences and objects most clearly come face to face with the issues of old versus new, old buildings versus new ones, etc.

Looking at the discarded items from the American scale (Appendix 1), the Swedish scale appears to have lost four items which in their wording make the respondent think directly about the new versus old dichotomy, e.g., "I would rather remodel an old house than build a new one" (36), "I like modern furniture better than the more traditional styles" (47), and "Modern buildings are seldom as attractive as older ones" (123). This is a worthwhile point because many of the statements in the scale (and other scales for that matter) do not necessarily imply a bipolar meaning, e.g., does answering 'strongly disagree' to the statement "I would enjoy living in a historic house" (109) mean the person prefers living in a modern house? It might mean he or she prefers apartment living.

Factor 4: Mechanical Orientation (MO)

Table 4 presents the nine items expected to load in this factor. In many respects this factor is the clearest conceptually and this was reflected by consistently high factor loadings and no shifting of items from other scales. Since eleven items had been discarded from the original American scale, there was concern for a loss of important

Table 4. *Items and their factor loadings for the Swedish "Mechanical Orientation" factor (accounts for 6.4 percent of the total variance in a 7-factor solution with orthogonal rotation, N=313).*

U.S. scale	No.	MECHANICAL ORIENTATION	Swedish loadings
MO	107.	I enjoy tinkering with mechanical things.	.80
MO	40.	I can repair just about anything around the house.	.73
MO	34.	I would enjoy working with precision power tools.	.69
MO	147.	When it comes to fixing things, I am hopeless.	-.63
MO	82.	Electricity fascinates me.	.59
MO	50.	As a child, I often watched when someone repaired things around the house.	.57
MO	30.	I am quite skillful with my hands.	.55
MO	80.	It is fun to make scale models of things.	.54
MO	27.	I usually save spare nuts and bolts.	.53

themes for this disposition, (see Appendix 1). The American scale displayed an interest in measuring the connection between mechanical orientation and architecture; three items tap this (2, 80, 90). The Swedish version retained the most subtly worded of those items "It is fun to make scale models of things"; this item also seems most directly related to an interest in mechanics in pure form. Another point seems worthy of mention regarding discarded items 49, 92, 126, and 181. Those items contain wording which seem to connect factors of material comfort and economic status with the concept of mechanics, e.g., "If I had the money, I would enjoy owning an expensive stereo set". If this indirect theme is present in this scale, apparently it is not applicable in the Swedish version.

Factor 5: Need for Privacy (NP)

Looking at Table 5, two interesting results concerning the factor loadings for the Need for Privacy factor are seen. First of all, four of

Table 5. *Items and their factor loadings for the Swedish "Need for Privacy" factor (accounts for 6.3 percent of the total variance in a 7-factor solution with orthogonal rotation, N=313). Overlapping items appear in parentheses.*

U.S. scale	No.	NEED FOR PRIVACY	Swedish loadings
NP	4.	I prefer to live in an area where neighbors keep to themselves.	.64
NP	77.	I get annoyed when people drop by my house without warning.	.61
NP	108.	I do not like to loan things to neighbors.	.61
NP	10.	I have my best thoughts when I am alone.	.56
NP	87.	I often get the feeling that I just must be alone.	.51
NP	31.	It's annoying to have to share an office or work space with someone.	.50
ET	43.	I feel most secure working around the house.	.47
NP	135.	I usually enjoy having lots of people around.	-.47
NP	129.	I am easily distracted by people moving about.	.47 (-.47 factor 7)
NP	28.	I get annoyed when my neighbors are noisy.	.46 (-.33 factor 7)
ET	157.	I worry a lot about the rising crime rate.	.38 (.44 ET)
ET	128.	The problems of the cities will never be solved.	.36
ET	144.	It is dangerous nowadays to live in a large city.	.34 (.47 ET)(-.38 UR)
NP	35.	I have difficulty concentrating when things are noisy.	(-.69 factor 7)
NP	118.	It is easy for me to work undistracted in most situations.	(.77 factor 7)

the eleven core items obtained loadings greater than .30 in Factor 7, which was expected to be a factor for residual variance, but instead appears to be a special component of privacy, (please see the section on Factor 7). The second result of interest is the addition of items 43, 128, 144, and 157, all items originally placed in the Environmental Trust scale. For this Swedish sample it appears one component of the Need for Privacy disposition is related to a trust in the environment, especially the urban environment. This result does not disturb the underlying concept of this scale; to the contrary, it expands the need for privacy to include an anti-urban theme, i.e., a greater need for privacy in some persons may go together with a lesser appreciation of cities. This is slightly supported by the negative correlation ($r = -.15$) reported by McKechnie between the Need for Privacy and Urbanism scales (1974, p. 24).

Factor 6: Environmental Trust (ET)

In the West German effort the Environmental Trust scale did not emerge as a factor (Seiwart & Krampen 1984, p. 6; Espe 1984, p. 9). The Swedish version of this scale contains ten items with loadings greater than .30. As Table 6 reveals, seven of the original nine American items loaded satisfactorily on this factor while the remaining two shifted to the Need for Privacy factor. The three items "elec-

Table 6. *Items and their factor loadings for the Swedish "Environmental Trust" factor (accounts for 5.6 percent of the total variance in a 7-factor solution with orthogonal rotation, N=313). Overlapping items appear in parentheses.*

U.S. scale	No.	ENVIRONMENTAL TRUST	Swedish loadings
ET	53.	I often feel lonely when I am by myself.	.63
ET	101.	I'd be afraid to live in a place where there were no people nearby.	.60
PA	122.	The wilderness is cruel and harsh.	.58
ET	121.	It is dangerous to work around heavy machinery.	.51
ET	144.	It is dangerous nowadays to live in a large city.	.47 (-.38 UR, .34 NP)
ET	139.	I am afraid of driving in the city.	.46
ET	157.	I worry a lot about the rising crime rate.	.44 (.38 NP)
ET	68.	Flying in a small airplane would make me nervous.	.43 (-.48 SS)
AN	173.	Old buildings are usually depressing.	.43 (-.43 AN)
MO	82.	Electricity fascinates me.	.31 (.59 MO)
ET	43.	I feel most secure when I am working around the house.	(see Need for Privacy, table 5)
ET	128.	The problems of the city will never be solved.	(see Need for Privacy, table 5)

tricity fascinates me" (82), "The wilderness is cruel and harsh" (122), and "Old buildings are usually depressing" (173) were added to the Swedish version of this scale based on their factor loadings. The three items fit conceptually with this scale; being fascinated with electricity is interpreted as a lack of competence concerning electricity or electrical objects in the environment which in turn could lead to lack of trust in an environment where an electrical problem might occur, e.g., a blown fuse in the home or an ignition problem in one's automobile. This item received a barely acceptable loading in ET (.31) and is much more appropriately placed in the Mechanical Orientation factor where it loaded much higher (.59). It might be argued that item 122 adds a theme of trust in the natural environment which is not present in the unabridged American scale. Lastly, item 173 introduces an interesting psychological aspect of environmental trust, i.e., the possibility of feeling depressed by a type of building.

The eleven discarded items from the original American scale (Appendix 1) are not easily explained by cultural differences, with the possible exceptions of items 133 and 151; public restrooms and highways probably are much safer in Sweden than in the U.S. and therefore less likely to be contained in a concept of environmental trust. Two other discarded American items touch on the theme of environmental trust and technology (96 and 175). It might be that in Sweden concepts such as 'computers taking over the world' and 'complex technology limiting individuality' are more connected to the political or bureaucratic environment, not the physical environment per se. One other discarded item, "I am afraid of heights" (161), is hopefully reflected in the retained item "Flying in a small plane would make me nervous" (68). Finally, three of the remaining discarded items, 130, 150, and 162, seem to focus on a connection between being proficient in one's environment, e.g., having good location sense or an ability to repair objects, and having environmental trust. If this is the case, the Swedish scale is wanting because the relation between feeling and demonstrating control in one's environment and environmental trust is an important one.

Factor 7: (unnamed)

The seventh factor accounted for only 3.79% of the total variance and was not expected to be interpretable. As it turned out, this factor contained the following six items (item number to the left, factor loading to the right):

118.	It is easy for me to work undistracted in most situations.	.77
35.	I have difficulty concentrating when things are noisy.	-.69
129.	I am easily distracted by people moving about.	-.47
28.	I get annoyed when my neighbors are noisy.	-.33
170.	I enjoy being in dangerous places.	.32
95.	I'd rather live in the suburbs than in the city.	.31

This factor possibly represents a component of privacy related to concentration or more specifically, tolerance for various forms of disturbances which occur in the environment, e.g., danger, noise, even neighbors. Since two of the six items loaded in this factor are contained in the

Swedish scale for privacy, there is no reason to think the measurement of this aspect of privacy is missing in the Swedish version.

STEP 5: FACTOR ANALYSES OF SUBSAMPLES (65 ITEMS)

Before settling on the factor solution presented above it was decided to take the larger sample and run three separate factor analyses*, one for the females, one for the males, and one for the subsample of retired persons (both sexes combined). Although we were basically satisfied with the previous factor solution for the total sample, it was important to check if any subgroups were responding very differently, conceptually, to the dispositions the scales are believed to measure. The careful analysis of different groups' factor loadings and item-scale compositions can provide information beyond the stability of an inventory's factor structure; it can be an effective way to gain insight into psychological differences between various groups. In the present case, only the most salient results will be discussed, once again with an emphasis on item shifts between scales and/or other relevant changes in the six environmental dispositions being measured.

Females (N=157, mean age = 43)

The female subsample consisted of 52 retirees (age 65-70, mean = 66), 64 university students (architecture, psychology, and chemistry, mean age = 30), and 41 working females (teachers and secretaries, mean age = 34).

The females' factor structure contained two noteworthy deviations from the total sample's structure. First, the items for Environmental Trust did not appear as an independent factor for the females. Instead, without exception, the items from ET loaded under a factor identified as Stimulus Seeking. This assimilation of the two factors implies, for women, stimulus seeking is connected to feelings of danger and trust in environments, whether it is the home, a workshop with heavy machinery, the city, the wilderness, etc. This result also implies women approach adventure, travelling, etc., with more thought of personal safety and environmental trust than, for example, men.

A second interesting finding here was related to the females' factor Need for Privacy. In agreement with the total sample's NP factor, this subsample had high loadings for all the same items. However, the females had six additional items with loadings greater than .30 (38 UR, 68 ET, 121 ET, 139 ET, 122 ET, 173 ET). Five of these items come from the Environmental Trust scale, whereas the total sample contained only two items from ET in its Need for Privacy scale (144, 157). Looking at these six additional items, they can be categorized as things or experiences which are physically hard to affect and are

* 7 factor, orthogonal rotation. See BMDP program P4M (Dixon 1981, p.48).

not traditionally 'feminine', e.g., flying in a small plane, the wilderness, large cities, and heavy machinery. Therefore, if the Need for Privacy disposition is characterized by a need for isolation from stimuli, the women, in comparison to the total sample, seem to be more sensitive to, or have a broader range of stimuli which they consider privacy related. In conclusion, both these shifts in factor structure for the women demonstrate the existence of complicated conceptual connections between the dispositions Stimulus Seeking, Need for Privacy, and Environmental Trust.

Males (N=150, mean age = 46)

The male subsample was also characterized by retirees (N=63, age 65-70, mean = 66), 50 university students (architecture, psychology, and chemistry), and two working groups (teachers and lighting engineers, N=37). The 7-factor orthogonal factor analysis for this subsample contained no significant changes in structure compared to the total sample; all 6 factors were clearly identifiable and all 65 items had loadings greater than .30 on the same factors. Five of the factors did however contain between two and four additional loadings above .30 and although those item-shifts do not change the structure of the Swedish scales, they do point out specific differences between this subsample's conceptualization of some of the environmental dispositions and the larger sample.

First, for Urbanism, the males' factor also included the items "I enjoy being in dangerous places" (170), "I worry a lot about the rising crime rate" (157), and "I like to ride on roller coasters" (106), all clearly urban-related statements and possibly indicative of a masculine tendency to seek, or even create more danger in urban environments. For Stimulus Seeking the male sample had four additional items coming from four of the other scales: "I would enjoy living in a historic house" (AN 109), "I am quite skillful with my hands" (MO 30), "I usually enjoy having lots of people around" (NP 135), and a negative loading for "I'd rather live in the suburbs than in the city (UR 95). Since the loadings were quite low (less than .32) and the items are so disparate conceptually, no explanation is apparent as to their implications for this factor.

The males' Need for Privacy factor included two of the same newly added Environmental Trust items as found in the females' structure: "The wilderness is cruel and harsh" (46) and "It is dangerous to work around heavy machinery" (45). One may ask why these two items did not appear in the factor structure for the total sample's Need for Privacy factor? These items do load on that factor, but did not reach the .30 level (.28 and .25) and were therefore not included in the previous presentation.

The last factor for the males' factor structure with additional loadings was Environmental Trust. Here, three items from the Stimulus Seeking scale received positive loadings: "The idea of walking into the forest and living off the land for a week appeals to me" (6), "I would like to build a cabin in the woods" (169), and "I'd rather sleep on the ground than in a tent" (183). These items clearly point to the expansion of this sample's Environmental Trust to include trust in the outdoors, or the natural environment, a finding which fits well with traditional masculine stereotypes.

Retired persons (N=115, mean age = 67, range = 65-70)

The subsample of retired persons came from a recent study of retirement (Küller 1984, Watzke 1986). Approximately half the sample reside in urban environments, the other half in rural and archipelago areas. The educational and vocational background was mixed, but less than five persons had education at the university level. The urbanites consisted mostly of factory workers and civil employees. The rural inhabitants were chiefly small scale farmers, artisans, and fishermen.

In many respects the factor structure for the retired persons was expected to deviate the most from the large sample's structure. This expectation was based on more than the point discussed earlier concerning the age of the various samples from which the American scales were constructed. More generally, it was felt the process of aging might affect the constructs behind the scales. Relatively little is known about older persons' orientation to environments, and even less is known about their values, attitudes, and dispositions toward the everyday physical environment, i.e., the types of themes measured by the ERI. Related to the collection of ERI data from the retirees, it should be mentioned that a special instruction was included on all the Swedish inventories: "It is important that you try to answer every item even if you have no direct experience with it, nor intend to in the future".

The factor solution for the retirees (orthogonal rotation) yielded identifiable factors for all six environmental dispositions. Furthermore, only eight of the total loadings ($>.30$) from the total sample's factor structure were not replicated. At the same time, 17 additional loadings appeared among this subsample's six factors.

First, for Stimulus Seeking, only one new (negative) loading appeared: "I feel most secure when working around the house" (43). For the other subsamples this item was loaded in the Need for Privacy factor. Next, for the Urbanism factor, one loading disappeared: "It is dangerous nowadays to live in a large city" (144). This item is apparently broadly interpretable; it is the only item which loaded significantly on three factors: ET .47, UR -.38, NP .34, (the loadings for ET and NP did appear in the retirees' factor structure).

The item "I would like to live in a palace or castle" (163) did not appear in this sample's Antiquarianism factor. Here again, for the total sample, this item had double loadings (AN .32, SS .43) of which Antiquarianism is the weakest. The fact that this item loads at all in Antiquarianism might be a function of cultural differences; in Sweden, unlike the U.S., 'castles' are quite commonplace and outings to a castle are fairly common experiences. It follows that this item would appear under a factor measuring enjoyment of historical places. For the Swedish retirees however, this explanation does not apply. One additional loading in Antiquarianism worth mentioning was the appearance of Stimulus Seeking item 6: "The idea of walking into the forest and living off the land for a week appeals to me". This loading is probably best explained by the fact that almost half this subsample was raised in rural environments which means that many of these persons have actual experiences from their past of 'living off the land'.

For the retirees' Mechanical Orientation factor an interesting thing occurred; eight out of nine of the original item-loadings from the larger sample appeared, but this group also added seven items from the Environmental Trust and Stimulus Seeking scales (ET 139, ET 122, ET, 121, SS 152, SS 141, SS 21, SS 68). An explanation of these items require, or allude to, fairly skilled physical abilities, e.g., driving in the city, flying a plane, working with heavy machinery, and sailing a ship. The fact that these items emerged in this sample's factor measuring mechanical orientation can be seen as a reflection of aging and loss of physical abilities.

For the Need for Privacy factor the one expected item which did not load for the retirees was "I feel most secure working around the house" (43). Instead, this item received its loading in Stimulus Seeking (-.32). This might be a reaction to an extensive homelife for retired persons, i.e., many retirees manage to obtain the privacy they desire, whereas being engaged in activities or experiencing adventure is not so easily accomplished, especially if one is reluctant to get away from the home. Finally, for the Need for Privacy factor, two new items loaded for the retirees which did not load for the larger Swedish sample but are included in the American NP scale (items 35 and 118, see Table 5).

Three of the ten items for Environmental Trust failed to appear in the retirees' factor structure (68, 139, 173). Two of these items, as discussed earlier, loaded instead under Mechanical Orientation, implying that for this sample driving a car in the city and flying in a small plane are seen as activities testing mechanical skill, not one's trust in the environments those activities take place in. Of greater interest are the four items added to this factor: "It is exciting to go shopping in a large city" (UR 14); "I usually enjoy having lots of people around" (NP 135); "When it comes to fixing things, I am hopeless" (MO 147); and "I am quite sensitive to the character of a building" (AN 105). It should be noted that all the items for the ET scale are negatively worded with respect to the construct of environmental trust, i.e., greater agreement with a statement is measured as less environmental trust. The item "It is exciting to go shopping in a large city" is loaded in the same direction as the other ET items so agreeing to this statement should also relate to distrust in the environment. This finding is not clearly interpretable; possibly for retired persons being 'excited' (when connected with the potential stress of shopping in a large city) has negative connotations. The other three new items are more understandable. "Having lots of people around" can be understood as a defense for feeling more vulnerable in an environment, i.e., there's safety in numbers. Likewise, for an older person, being unable to 'fix things' in an environment, the home for example, could be associated with a feeling of insecurity in that environment. Lastly, being "quite sensitive to the character of a building" seems to fit with the concept of environmental trust if the term 'sensitive' is taken more in the emotional sense of the word, i.e., irritable, nervous, being affected by. It is almost as if the older subjects are saying 'we don't walk into just any building, we are selective (suspicious, careful)'.

For the other subsamples the seventh factor was not discussed because it fit very closely with the seventh factor for the total sample. For the retirees however, factor 7 contained eleven items with loadings greater than .30. This factor accounted for only 4.5% of the total variance so it is not considered a critical factor but a study of the items in this factor illustrates the major point being discussed in this section, i.e., the problem of subsamples interpreting a word, an item, or a group of items in a different manner from the sample in large.

Table 7. *Factor 7 for the retirees factor solution (accounts for 4.6 percent of the total variance in a 7-factor solution with orthogonal rotation, N=115). Overlapping items appear in parentheses.*

U.S. scale	No.	FACTOR 7	Swedish loadings
ET	128.	The problems of the cities will never be solved.	.61
NP	118.	It is easy for me to work undistracted in most situations.	.52 (NP -.34)
UR	95.	I'd rather live in the suburbs than in the city.	.43 (UR -.38)
NP	108.	I do not like to loan things to neighbors.	.42 (NP .38)
SS	141.	I am an adventurous person.	.36 (SS .54)
UR	165.	The cities contain the best aspects of modern life.	-.35 (UR .56)
MO	50.	As a child I often watched when someone repaired things around the house.	.35 (MO .31)
ET	144.	It is dangerous nowadays to live in a large city.	.35 (NP .34, ET .33)
PA	183.	I would rather sleep on the open ground than in a tent.	.34 (SS .37)
UR	85.	Small-town life is too boring for me.	.32
SS	163.	I would like to live in a palace or a castle.	.31 (SS .41)

At first glance (Table 7), this factor appears to be a more negative version of the Urbanism factor, but there are a few items that go beyond a simple urban versus rural interpretation, e.g., 50, 118, 108, and 141. When one includes these items this factor takes on a more pointed theme of rural living which might be described as self-sufficiency. This is not such a far-fetched interpretation when one considers that this subsample is comprised of older persons, half of whom live quite removed from city life, on farms and even more isolated out in the archipelago. This type of disposition is even meaningful to the urban portion of the sample when one interprets the factor more as a

philosophical disposition; i.e., "I am older now, I prefer peaceful living, and I have the experience to justify my opinions on these matters, e.g., the problems in the cities of today".

Item overlap and scale correlations

Before turning to the results per se for the sample, a brief comment will be made concerning the amount of overlap among the 65 item pool and the correlations between the six factor scales. Of the final 65 items retained for the Swedish version of the ERI there were a total of nine items which had loadings greater than .30 in more than one factor (based on the preferred orthogonal 7 factor solution for the total sample, $N=313$). One of these items had loadings in three factors: "It is dangerous nowadays to live in a large city" (144). A look at Appendix 2, which contains these overlapping items and their respective loadings, shows that the items fit rationally with the various scales. Overlapping items present a practical problem with regard to scoring procedures. At this early stage in the development of the Swedish inventory it was decided to use factor scores to obtain individuals' values for each scale, so items loading in two scales each are given their respective weights. Later, to make scoring more easy, overlapping items should be assigned to the one scale with their highest loading, or some items could be removed altogether if they were felt to be dispensable.

Table 8. *Correlations between the scales for the Swedish (in parentheses) and American versions (Swedish $N=313$, American $N=2475$).*

	SS	UR	AN	MO	NP	ET
SS	1.00					
UR	(.14) .08	1.00				
AN	(.23) .34	(.16) .03	1.00			
MO	(.14) .27	(-.06) -.04	(-.01) -.02	1.00		
NP	(-.20) .05	(-.12) -.15	(-.07) .06	(.02) .03	1.00	
ET	(.25) .20	(-.04) .24	(.05) .04	(.07) .12	(-.19) -.25	1.00

In order to obtain the correlations between the six factors retained for the Swedish ERI, an oblique, 7 factor, factor analysis was run. This oblique factor analysis yielded the same six factors as the orthogonal solution with nearly identical item-factor correspondence. Looking at the correlations between the Swedish factors* (Table 8), it was concluded that these six factors are sufficiently independent and for this reason the orthogonal solution was selected for the continued development of the Swedish factors and the presentation herein. A comparison of the American and Swedish scale correlations revealed a satisfactory congruity; the two noteworthy dissimilarities being the correlations between Environmental Trust and Urbanism and between Need for Privacy and Stimulus Seeking.

STEP 6: ANALYSIS OF FACTOR SCORES FOR SELECTED SUBSAMPLES

In this final step some results will be presented and discussed which focus on the first attempts to evaluate empirically the Swedish version of the ERI. This is not intended as a comprehensive validation of the inventory; the validation of any psychological inventory is a long-term multi-faceted chore. For a brief and clear discussion of the ingredients which go into a thorough validation effort, the reader is advised to read Part III of the ERI manual (McKechnie 1974). For the Swedish ERI the following first steps toward validation have been conducted.

Factor scores** for the total sample (N=313) for each of the six factors (SS, UR, AN, MO, NP, ET) were calculated and these values then treated to analysis of variance** (ANOVA) according to selected independent variables, e.g., age, sex, and vocational background. Throughout this section, whenever applicable, reference will be made to the findings reported by McKechnie (1974) with the original ERI and Espe (1984) with the German ERI. In the final part of this section a discussion will be presented concerning only the factor scores for the subsample of retired persons. For that subsample we have more detailed demographic and clinical data which will allow more emphasis to be placed on the interpretational value of the Swedish ERI results to date.

Demographic variables: age and sex

To investigate the effect(s) of age, the sample was grouped into three categories: youngest*** (age 20-25), middle (age 26-59), and oldest (age 60-70). The profiles of the mean factor scores for the three age groups, separated by sex, are presented in Figure 1. All group means are found in Appendix 3.

- * *These correlations are produced as part of the oblique factor analysis (dquart rotation), see BMDP program 4 M (Dixon 1981, p. 480).*
- ** *7-factor, orthogonal rotation, see BMDP program P4M; BMDP program P7D (Dixon 1981).*
- *** *A second cutpoint of 29 years was tested for the 'youngest' category and yielded nearly the same results.*

First, for the Stimulus Seeking factor, the ANOVA revealed a significant age effect and a tendency for sex ($F=37.5$, $df=2$, $p=.00$; $F=3.3$, $df=1$, $p<.07$). These results support the correlations reported by McKechnie (p. 5): age $=-.38$, sex $=-.43$ (male=1, female=2). Similar findings were reported for the German ERI data (p. 9). It seems clear that Stimulus Seeking is related to age and sex. The fact that the Swedish sample only showed a tendency for a sex effect in this factor might be explained by the overrepresentation of female architecture and psychology students (32% of the females); those two subgroups scored very high in SS. This will be discussed in more detail in the section concerning educational or vocational groupings. Lastly, figure 1 shows that the effect for age is most marked for the oldest group, an expected result for Stimulus Seeking.

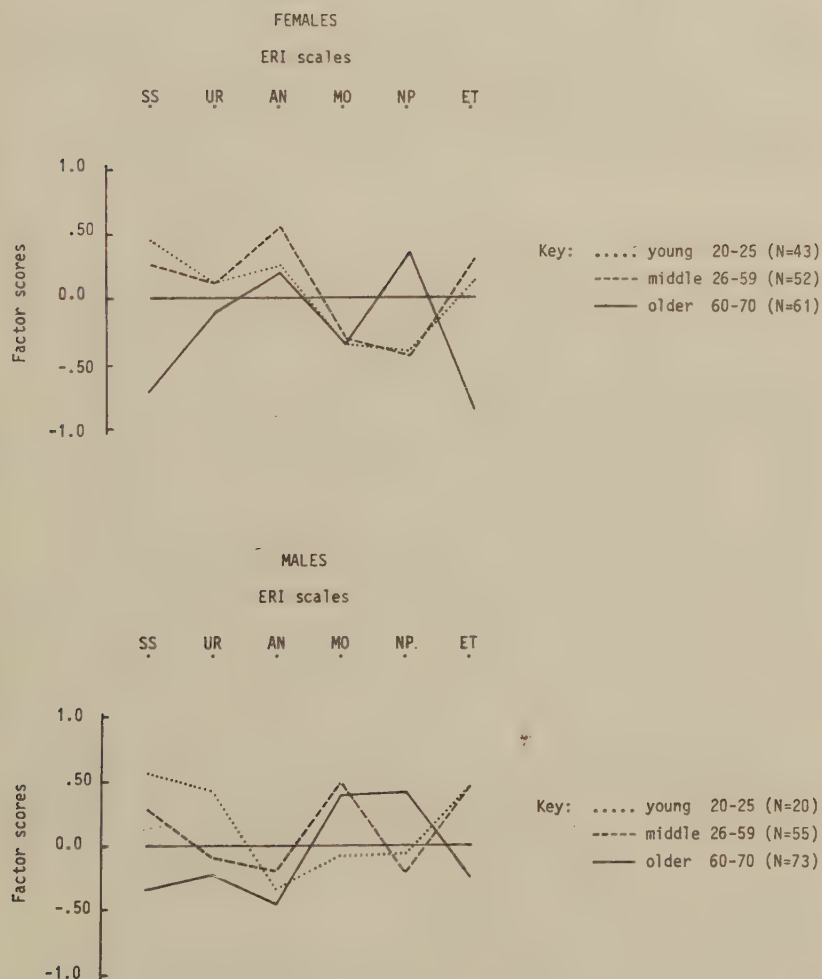
Next, for Urbanism, neither the American or German efforts reported significant age or sex effects for this factor. For the Swedish sample an age effect was present ($F=3.5$, $df=2$, $p<.04$), but this is a function of the older age group containing 50% retirees from the rural and archipelago environments - those persons were expected to score low in UR. Although not significant, the youngest males in the Swedish sample scored higher than any other groups in Urbanism, a finding that needs more investigation with larger samples before further discussion.

In Antiquarianism, the American and German data reported significant correlations with age and sex: U.S. age, $r=-.24$, German age, $r=-.18$; U.S. and German sex, $r=.18$. For the Swedish sample a tendency for age effect ($F=2.85$, $df=2$, $p<.06$) and a significant effect for sex were obtained ($F=29.3$, $df=1$, $p=.00$). An inspection of the means (Figure 1, Appendix 3) shows that for this factor there is a 'U' shaped curve for age, i.e., the middle aged group scored highest while the youngest and oldest scored lower. Looking at the items again for Antiquarianism (Table 3), this finding is plausible if this disposition is tapping values for intellectual, historical, and cultural experiences. It could be argued that the middle ages are the years that those types of activities are most appreciated and pursued. Finally, it appears there is a clear relation between sex and Antiquarianism, females scoring higher at all ages than males.

In support of the American scale of Mechanical Orientation, the Swedish findings (as well as the German) showed a significant sex effect, males scoring higher than females ($F=33.6$, $df=1$, $p=.00$). Figure 1 does however show a deviating lower score on this factor for the youngest males. An inspection of the means divided by educational/vocational group suggested that the overrepresentation of chemistry students among the youngest males explains this deviation (please see the next section on educational and vocational background).

Next, the Need for Privacy factor revealed a significant effect for age ($F=19.5$, $df=2$, $p=.00$) and a tendency for males to score higher than females on this factor ($F=3.62$, $df=1$, $p<.06$). Neither of these results were reported by McKechnie, but his data did show a tendency in the same direction for Need for Privacy and sex ($r=.13$). For the German sample a significant correlation for age was reported ($r=.28$), thus lending support to the Swedish finding.

Figure 1. Profiles of mean factor scores according to age groupings.



The Swedish finding for age is a function of the oldest aged subsample, it is clear that the retirees expressed a higher need for privacy and this fits well with those theories of aging and retirement which hold withdrawal from social involvement central to their discourse, see, e.g., Cumming & Henry (1961).

Finally, the factor for Environmental Trust revealed significant effects for both age and sex ($F=40.8$, $df=2$, $p=.00$; $F=11.6$, $df=1$, $p=.00$), the oldest and female groups scoring lower. Both the American and German samples reported significant correlations for age: U.S. $r=-.16$, $p<.01$; German $r=-.42$, $p=.00$. McKechnie also reported a significant effect for sex in the American sample ($r=-.28$, $p=.00$, male=1, female=2). The Swedish results suggest that the most salient drop in Environmental Trust occurs for the age group over 60, both males and females (see Figure 1).

Educational/vocational background

Besides variables like sex and age it was important to investigate possible differences for educational and vocational background. Studying these kinds of background variables is a good starting point to assess the potential of a new inventory such as the ERI in terms of applied research questions. For a presentation of such uses for the ERI, e.g., using scores on the ERI to compare various environmental interest groups, one should refer to McKechnie (1977a, 1977b). The researchers in West Germany also reported findings comparing, for example, design students, communication students, bankers, and biology teachers (Espe 1984). Educational and vocational background are not as potent variables, in terms of estimating concurrent and predictive validity, as for example, actual environmental behaviors. Nevertheless, if the relationships obtained are plausible, this is encouraging. Of more interest, with regard to relationships between educational/vocational background and ERI dispositions, is the personological value of such data. Finding out what groups of persons are scoring higher or lower on the various dispositions should have theoretical value for personality experts and even more so for those concerned with more applied research in man-environment studies (see, e.g., Craik 1970 b, 1972).

To look at educational/vocational background, five subsamples were selected: architecture students, $N=40$, mean age=30; graduate students in psychology, $N=48$, mean age=32; primary and secondary school teachers, $N=37$, mean age=30; chemistry students, $N=26$, mean age=23; and lighting engineers*, $N=16$, mean age=39. Figure 2 shows these groups' factor scores, separated by sex (see Appendix 3 for the raw cell means). The significance of these results was checked using two-way ANOVA (sex by educational/vocational background).

For Stimulus Seeking, no significant differences were found but there was a tendency for the architecture group to score higher than the teachers ($F=3.23$, $df=1$, $p<.08$), a finding which supports Espe's reported higher scores in SS by German design students (1984, p. 12).

* This was a mixed group of practicing engineers, some working in industry, consulting, etc.

For Urbanism, the architecture students scored significantly higher than all other groups* (chemistry students $F=4.38$, $df=1$, $p<.02$; psychology students $F=4.44$, $df=1$, $p<.03$; teachers $F=11.56$, $df=1$, $p=.00$). This finding was expected due to the emphasis on urban building in most educational programs in architecture.

For all groups, as reported in the section on sex differences, females scored higher than males in Antiquarianism. The chemistry students scored lower than both the architecture students ($F=7.58$, $df=1$, $p<.01$) and the psychology students ($F=4.34$, $df=1$, $p=.04$). The values for the chemistry students might be partially confounded by the younger age of this group, but the high scores for the architecture students were expected since McKechnie (1974, p. 18) reported a significant correlation for a group of male architects and this scale ($r=.29$, $p<.01$). It is also worth noting that the male engineers and chemistry students scored lowest in this disposition (see Figure 2).

McKechnie reported a $-.57$ correlation ($p=.00$) between a sample of male psychologists and their scores in Mechanical Orientation (1974, p. 25). Figure 2 shows that the Swedish sample of psychology students was the lowest scoring in MO, lower, e.g., than the architecture students ($F=4.10$, $df=1$, $p<.05$). As expected, the lighting engineers scored highest of all groups in this disposition.

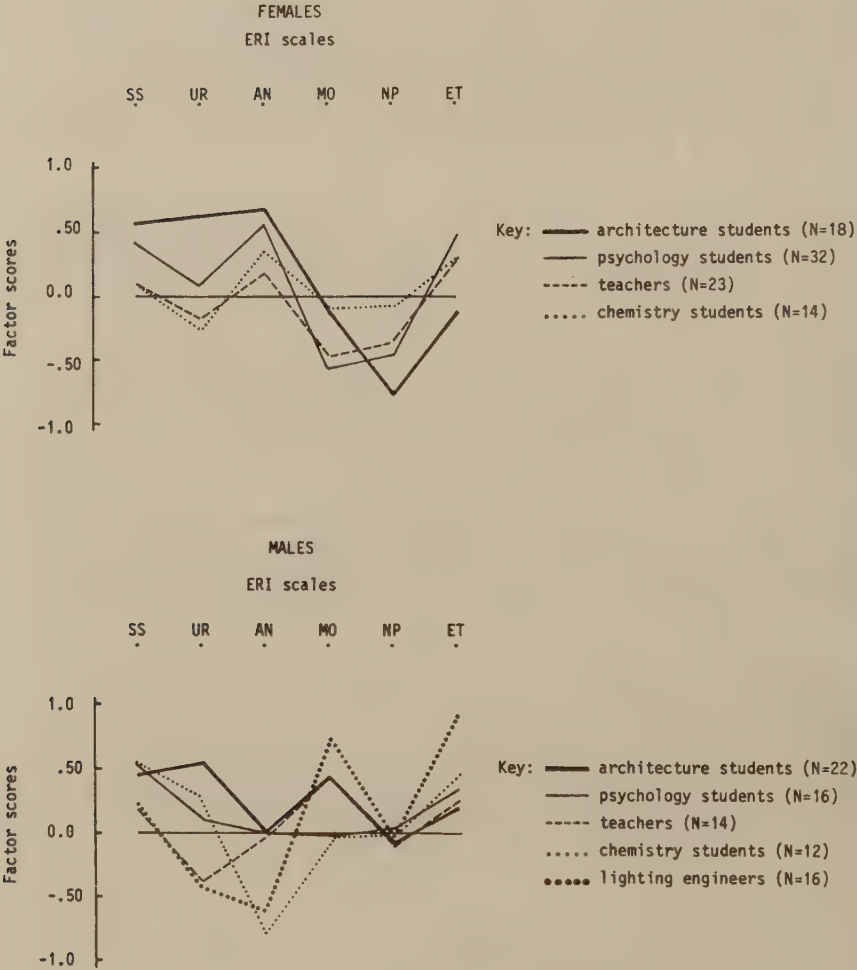
For the Need for Privacy scores, the males showed no noticeable difference according to educational/vocational background. For the females, however, a large difference was visible between the chemistry students and the architecture students, the latter scoring lower. The female teachers and psychology students had similar means falling between the other two groups.

Lastly, for Environmental Trust, these subsamples revealed no significant differences for sex or educational/vocational background. It is interesting to note, however, that both female and male architecture groups scored lowest in this disposition and that the engineers scored markedly higher than all other groups (mean=.94).

In concluding this section, it is worth noting that no interpretations of composite profiles will be presented here, although this is tempting (see for example, the composite profiles between only the architecture and chemistry students). The configuration of the scores on all six dispositions could be useful data for inferences about personality, if for example, one had larger sample sizes and more data from other sources. This unfortunately is not the case for these Swedish samples and any such interpretations were therefore deemed inappropriate.

* ANOVAS were not performed with the engineer subsample since no females were present.

Figure 2. Profiles of mean factor scores according to educational/ vocational groupings.



Validation data for the retirees subsample

As mentioned previously, the subsample of retirees had participated in a comprehensive research project (Küller 1984, Watzke 1986) concerned with the description of retirement patterns and personal adjustment of persons coming from different living environments. For this reason, there was an opportunity to relate this sample's scores on the six ERI factors to additional variables, e.g., adjustment to retirement, introversion-extroversion, and cognitive competence.

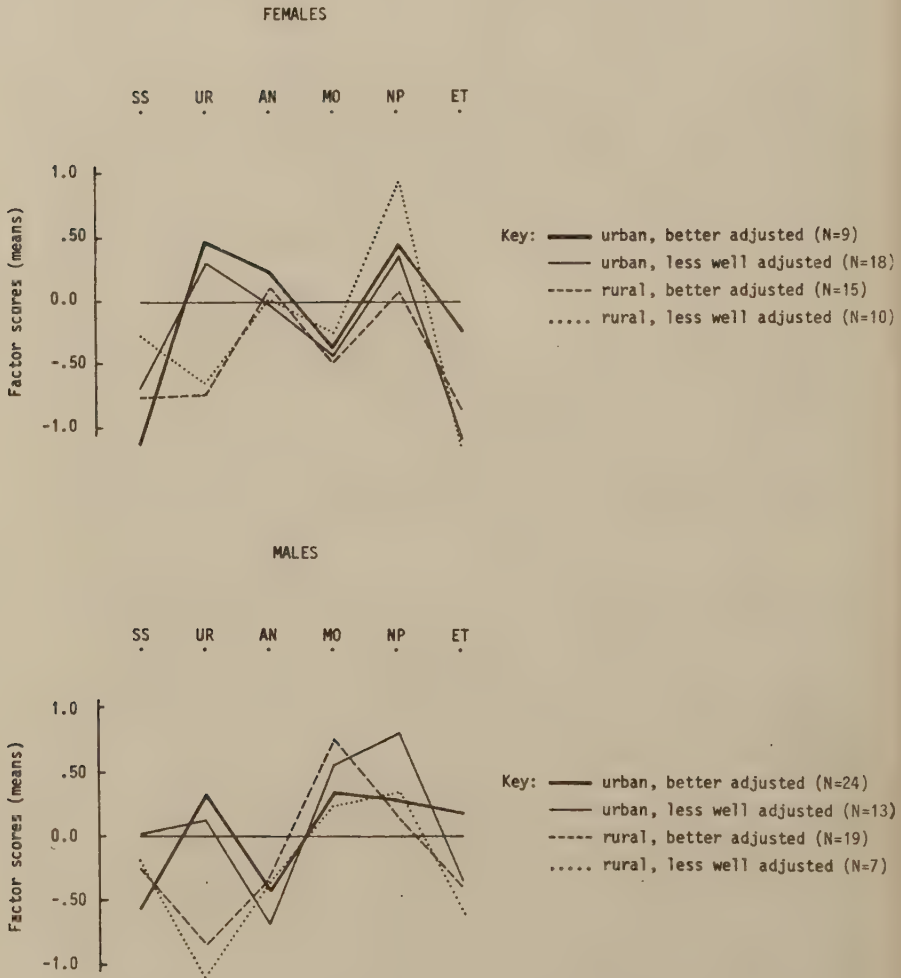
First a three-way ANOVA was performed to investigate the relationships between sex, living area, and adjustment to retirement. Please refer to Figure 3 for the profiles of the retirees' mean factor scores (for cell means see Appendix 4). As hypothesized, the same four factors revealed significant differences for sex as in the larger sample. The male retirees scored higher in Stimulus Seeking ($F=5.35$, $df=1.107$, $p=.02$), Mechanical Orientation ($F=22.80$, $df=1.107$, $p=.00$) and Environmental Trust ($F=8.30$, $df=1.107$, $p=.00$), while the females displayed a more positive disposition towards Antiquarianism ($F=6.09$, $df=1.107$, $p=.02$).

To investigate the effects of living area, the retirees were classified as urban or rural residents. To increase the cell numbers, the subjects from the large and smaller city environments were combined and likewise for the farming and archipelago samples (other data from the study contained no evidence to discourage combining these samples). As hypothesized, the urban retirees scored significantly higher in Urbanism ($F=47.19$, $df=1.107$, $p=.00$). There was also a tendency for the urbanites to score higher in Environmental Trust ($F=3.77$, $df=1.107$, $p=.05$); this result is understandable since three or four of the items in this scale (139, 144, 157) are based on trust in the urban environment. None of the other dispositions were significantly affected by living environment.

This sample of retirees can also be classified according to personal adjustment to retirement. This classification was based upon responses to a set of self-report items selected from a comprehensive interview form on retirement. For a detailed description of this adjustment criterion please see Küller (forthcoming) and Watzke (1986). The items making up the adjustment criterion are listed in Appendix 5. For the present analysis, the division between better adjusted and less well adjusted subjects was determined by the median value of the distribution of factor scores on the adjustment factor (criterion).

Three of the ERI factors revealed interesting results in terms of adjustment. First, the less well adjusted group scored higher in Stimulus Seeking ($F=4.15$, $df=1.107$, $p=.04$). This result is probably contingent on the age of this sample, i.e., many of the SS items are not relevant to the typical retired person's lifestyle. It appeared the better adjusted retirees realized this or acknowledged this fact more readily, thus scoring lower. Furthermore, if scoring higher on Stimulus Seeking is related to impulsivity, recklessness, and lower responsibility, while scoring lower is related to contentedness, retiring, and conscientiousness (McKechnie 1974, p. 17), then this result is quite plausible for better and less well adjusted groups of retired persons.

Figure 3. Profiles of mean factor scores for the retirees according to sex, living area, and personal adjustment.



A second result worthy of note was for the Need for Privacy factor. Here also, the less well adjusted scored higher ($F=3.65$, $df=1.107$, $p<.06$). Although only a tendency, this result also supports the validation sketch presented by McKechnie (1974, p. 19). If a higher score on this factor is related to a person's rejection of social involvement, moodiness, and pessimism, while a lower scoring person is judged as easygoing, friendly, and tolerant, then these results also exemplify the adjustment groupings.

The third and most significant result confirmed one of the working hypotheses related to Environmental Trust, i.e., the better adjusted retirees were expected to score higher in this factor ($F=6.44$, $df=1.107$, $p=.01$). This result also supports McKechnie's validation data (1974, p. 18) where he reported higher ET scores correlating with Personal Adjustment on the Adjective Checklist ($r=.51$), Well Being on the California Personality Inventory ($r=.41$), and Barron's Ego Strength ($r=.54$).

A second analysis was performed* to see if there were any significant correlations between the ERI factor scores and other psychological data on the retired persons. This data also comes from the study mentioned previously (Watzke 1986) and can be summarized as follows.

1. Divergent thinking: Alternate uses for a common object, a daily newspaper (Guilford 1959).
2. Personality: The Eysenck Personality Inventory form A (Psykologi förlaget AB, Hågersten).
3. Cognitive competence: Verbal reasoning (opposites) and spatial reasoning (cubes) (Psykologi förlaget AB, Hågersten).
4. Self report items: A small group of questions from the interview form on retirement (Küller, forthcoming) were selected based on hypotheses relevant to the six ERI dispositions.

To begin with, Stimulus Seeking correlated with scores on Eysenck's Extroversion scale ($r=.38$, $p<.01$) with the self report item "Do you have a big need to have friends around?" ($r=.24$, $p<.02$) and with the interview question "Do you have any interests you'd like to pursue but haven't any time for?" ($r=.26$, $p<.01$).

Factor 3, Antiquarianism, had one significant correlation with the divergent thinking task, number of uses for a daily newspaper ($r=.23$, $p=.02$). Without more data, this result only warrants a tentative statement about the Antiquarianism disposition. If AN is related to intellectual and/or creative values, a correlation with the divergent thinking measurement is the most plausible among the psychological data available on this sample.

The scores for Mechanical Orientation were significantly correlated with the scores on the spatial reasoning test ($r=.25$, $p=.01$); a finding which might be taken as supportive of a relationship between mechanical competence and spatial reasoning, two tasks often said to be controlled by the right hemisphere (Blakeslee 1980, Nebes 1971).

* See BMDP program P4M (Dixon 1981, p. 480).

The Need for Privacy was significantly correlated with four of the other parameters: with Eysenck's Neuroticism ($r=.30$, $p<.01$) and three of the self-report questions "Do you like to always changing activities?" ($r=.23$, $p=.02$), "Do you like to go out and enjoy yourself?" ($r=-.34$, $p<.01$), and finally a question which asked the subject to rank the importance of 'leisure activities' in his lifestyle ($r=-.24$, $p=.02$, 1=most important to 7=least important).

Scores on the Environmental Trust factor also showed four significant correlations. ET was correlated with Eysenck's Neuroticism ($r=-.29$, $p<.01$). Two of the strongest correlations were between ET and the cognitive competence data: verbal reasoning ($r=.35$, $p<.01$); and spatial reasoning ($r=.36$, $p<.01$). These findings imply an interesting relationship, i.e., for this sample of retired persons, those who reported greater trust in the environment were also more competent in these two basic cognitive functions. This is certainly a hypothesis worthy of further exploration. The final correlation with ET was the self-report item "Do you have a big need to have friends around?" ($r=.27$, $p<.01$), an item which is almost identical to the ERI item 135 "I usually enjoy having lots of people around" which was discussed earlier as being significantly loaded in the Environmental Trust factor for the retirees' own factor structure.

In concluding, a reservation is in order concerning the data presented in this section. The earlier section on the effects of age showed that the retirees in the sample were responding differently, to a significant degree, on some of the environmental dispositions. For this reason, the correlations with other measures presented here, as well as the findings related to living area and personal adjustment, must not be generalized to the younger groups in this Swedish sample. Nevertheless, these findings are encouraging because of their rational and theoretical sense, especially in terms of the stated goal of adapting a Swedish ERI which is useful with older aged samples.

CONCLUDING REMARKS

The Swedish effort to adapt the Environmental Response Inventory was motivated by a belief in the underlying concept of the ERI, i.e., the importance of trying to measure environmental dispositions in a systematic manner. Attempting to translate an inventory in the first place should be taken as a sincere appraisal of the original instrument.

As stated in the introduction, we had modest expectations for this undertaking; any attempt to translate a self-report inventory to another culture must accept compromises. The fact that Environmental Adaptation and Pastoralism were not replicable is not offered as a challenge to the validity of those scales; more appropriately, it means those scales are less easily modified to Swedish conditions, i.e., the item pool tapping those dispositions requires new content, a task we chose to avoid at the present. The shortening of the replicated scales is another accepted compromise and is representative of a common psychometric issue. The shortened Swedish scales are not claimed to be "congruent" with the longer American scales; they necessarily lack some of the specific themes found in the American dimensions and these shortcomings have been acknowledged wherever possible. In other words, the Swedish version of the ERI is regrettably not as

broad as the original.

On the more positive side, there is modest, but convincing evidence that the six environmental scales in the Swedish inventory have retained very much of the conceptual basis found in the American scales and that the Swedish scales are potentially useful for testing a wide variety of persons, from young university students to retired farmers. This evidence was presented throughout Steps 5 and 6 above, a limited, but nevertheless beginning effort towards validation of the Swedish version. The number of Swedish findings which support the American results as well as the manifest sense of these findings deserves to be regarded in a positive light. Of course, more validation data is required to offer a more complete picture, e.g., reliability data, analyses with more predictor variables, and most importantly, data relating scores in the dispositions to relevant environmental behaviors.

To the present date, we are encouraged by our efforts to adapt the ERI, we feel we have a set of satisfactory scales measuring six meaningful environmental dispositions. It is our intention to continue the empirical evaluation of the Swedish version and to incorporate the inventory whenever appropriate in our ongoing research.

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Appendix 1. *Items discarded from the original American scales.*

Stimulus seeking (SS)

Items discarded after original correlational analysis (N=71):

- 5. I would enjoy driving a racing car.
- 18. I sometimes daydream of being stranded on a tropical island.
- 23. I prefer a stick-shift car to one with an automatic transmission.
- 74. I enjoy staying up all night.
- 84. I don't think that I would ever want to be hypnotized.
- 103. I have always been somewhat of a daredevil.
- 132. I need more variety in my life than other people seem to need.
- 145. I seldom vary the route I take to everyday destinations.

Items discarded after initial factor analyses (N=313):

- 124. I like experimental art.
- 168. Places often play an important role in my dreams.

Urbanism (UR)

Items discarded after original correlational analysis (N=71):

- 33. Suburbs should replace the city as the center of cultural life.
- 39. I often feel uneasy in a large crowd of people.
- 57. I often think of settling down on a farm some day.
- 62. I would enjoy entertaining famous people.
- 99. Country people are more honest than city people.
- 102. I find street noise very distracting.
- 104. I would enjoy riding in a crowded subway.
- 153. Most jewelry is a waste of money.
- 177. Mental problems are more common in the city than in the country.

Appendix 1.

Antiquarianism (AN)

Items discarded after the original correlational analysis (N=71):

- 25. I like homes with stone floors.
- 36. I would rather remodel an old house than build a new one.
- 47. I like modern furniture better than the more traditional styles.
- 52. Old sections of the city are more interesting than the new areas.
- 59. I would like to live in a modern, planned community.
- 123. Modern buildings are seldom as attractive as older ones.
- 136. I would enjoy watching movies made 15 or 20 years ago.
- 160. I am fond of oriental rugs.
- 155. I enjoy collecting things that most people would consider junk.

Items discarded after the initial factor analyses (N=313):

- 45. It would be fun to own some old-fashioned costumes.
- 91. I would enjoy working in a flower garden.

Mechanical orientation (MO)

Items discarded after original correlational analysis (N=71):

- 2. I would enjoy the work of an architect.
- 8. I would enjoy building a radio.
- 13. It is boring to spend all day working with your hands.
- 49. It is important for me to own top quality equipment.
- 61. I like things that have precision moving parts.
- 65. I would like to work with computers.
- 90. I understand the architectural idea that form follows function.
- 92. I enjoy owning a good piece of equipment, even if I don't get to use it much.
- 134. I often have trouble figuring out how to use household appliances.
- 126. I would like to own an expensive camera.
- 181. If I had the money, I would enjoy owning an expensive stereo set.

Appendix 1.

Need for privacy (NP)

Items discarded after original correlational analysis (N=71):

- 16. I like to be by myself much of the time.
- 41. I often have trouble getting the privacy I want.
- 58. I don't like being completely alone.
- 75. I am happiest when I am alone.
- 94. Fences make good neighbors.
- 143. There is too little emphasis on privacy in our society.
- 156. There are often times when I need complete silence.

Environmental Trust (ET)

Items discarded after original correlational analysis (N=71):

- 96. A complex technological society cannot tolerate individuality.
- 130. I often have trouble finding my way around a new area.
- 133. I usually avoid public rest rooms.
- 150. I get upset if I must do too many things at once.
- 151. I would feel safer on the highway if speed limits were reduced.
- 161. I am afraid of heights.
- 162. People who try to repair appliances themselves usually end up breaking them.
- 175. Computers may someday take over the world.
- 180. A man should spend his leisure time at home with his family.

Items discarded after the initial factor analyses (N=313):

- 20. I shudder at the thought of finding a spider in my bed.
- 89. Sometimes I'm afraid of too much stimulation from sounds, colors, odors, etc.

Appendix 1.

Pastoralism (PA)

Items discarded after original correlational analysis (N=71):

- 55. It is good for man to submit to the forces of nature.
- 63. I often feel that I am part of the space around me.
- 64. I can identify many of the local flowers and trees.
- 67. Our national forests should be preserved in their natural state, with roads and buildings prohibited.
- 97. I enjoy a change in the weather, even when it turns bad.
- 100. Hiking is boring.
- 113. Birth control practices should be accepted by everyone.
- 117. Today people are too isolated from the forces of nature.
- 125. I often wish for the seclusion of a weekend retreat.
- 127. Building projects which disrupt the ecology should be abandoned and the land returned to its natural state.
- 138. I like to get up early to see the sun rise.
- 142. I often have strong emotional reactions to buildings.

Environmental Adaptation (EA)Items discarded after original correlational analysis
(N=71):

- 1. I like amusement parks.
- 3. Machines increase man's freedom.
- 15. There should be a law against skyscrapers.
- 24. I like crystal chandeliers.
- 29. When buying clothes, I usually look more for comfort than for style.
- 37. We must move ahead and not worry about past failures.
- 42. There should be a law against anyone owning more than a thousand acres of land.
- 46. Motorcycles should be kept out of recreation areas.
- 71. I would enjoy owning a fancy watch.
- 73. Making rain by artificially "seeding" clouds is a great technological advance.
- 86. Fertilizers improve the quality of food.
- 88. A person has a right to modify the environment to suit his needs.
- 110. Sometimes I wish I had power over the forces of nature.
- 114. Jet air travel is one of the great advances in our society.
- 119. I like to dress in the latest fashion.
- 131. In spite of all the talk about pollution, the earth is still a safe place to live.
- 140. Trespassing laws should be more carefully enforced.
- 148. Modern communities are plastic and ugly.
- 149. Science does as much harm as good.
- 159. I like to go to shopping centers where everything is in one place.
- 166. It's nice to buy a new car every year or so.
- 184. Given enough time, science will solve most human problems.

Appendix 2. *Overlapping items and their factor loadings (7-factor, orthogonal rotation, N=313).*

U.S. scale	No.	Swedish loadings
ET	68. Flying in a small plane would make me nervous.	(SS -.48, ET .43)
ET	144. It is dangerous nowadays to live in a large city.	(ET .47, UR -.38, NP .34)
UR	14. It is exciting to go shopping in a large city.	(UR .47, AN .39)
ET	157. I worry a lot about the rising crime rate.	(ET .44, NP .38)
SS	163. I would like to live in a palace or a castle.	(SS .43, AN .32)
PA	169. I would like to build a cabin in the woods.	(SS .39, UR -.32)
AN	173. Old buildings are usually depressing	(AN -.43, ET .43)
MO	82. Electricity fascinates me.	(MO .59, ET .31)
UR	158. The cultural life of a big city is very important to me.	(UR .46, AN .52)

Appendix 3. *Cell means of groups' factor scores.*

Factor 1: "Stimulus Seeking"

	FEMALES		MALES	
	mean	(N)	mean	(N)
Retirees	-.69	(52)	-.32	(63)
Architecture students	.57	(18)	.46	(22)
Psychology students	.44	(32)	.53	(16)
Teachers	.11	(23)	.18	(14)
Chemistry students	.11	(14)	.52	(12)
Lighting engineers	—	—	.20	(16)
Young	.46	(43)	.56	(20)
Middle	.28	(52)	.39	(55)
Older	-.71	(61)	-.31	(73)

Factor 2: "Urbanism"

	FEMALES		MALES	
	mean	(N)	mean	(N)
Retirees	-.12	(52)	-.21	(63)
Architecture students	.62	(18)	.52	(22)
Psychology students	.08	(32)	.12	(16)
Teachers	-.16	(23)	-.36	(14)
Chemistry students	-.22	(14)	.30	(12)
Lighting engineers	—	—	-.39	(16)
Young	.11	(43)	.44	(20)
Middle	.11	(52)	-.07	(55)
Older	-.09	(61)	-.19	(73)

Appendix 3.

Factor 3: "Antiquarianism"

	FEMALES		MALES	
	mean	(N)	mean	(N)
Retirees	.07	(52)	-.44	(63)
Architecture students	.64	(18)	.00	(22)
Psychology students	.56	(32)	.00	(16)
Teachers	.18	(23)	-.01	(14)
Chemistry students	.36	(14)	-.76	(12)
Lighting engineers	—	—	-.58	(16)
Young	.24	(43)	-.35	(20)
Middle	.51	(52)	-.19	(55)
Older	.19	(61)	-.45	(73)

Factor 4: "Mechanical Orientation"

	FEMALES		MALES	
	mean	(N)	mean	(N)
Retirees	-.40	(52)	.49	(63)
Architecture students	-.12	(18)	.45	(22)
Psychology students	-.55	(32)	-.01	(16)
Teachers	-.47	(23)	.45	(14)
Chemistry students	-.10	(14)	-.03	(12)
Lighting engineers	—	—	.70	(16)
Young	-.39	(43)	-.05	(20)
Middle	-.36	(52)	.49	(55)
Older	-.39	(61)	.42	(73)

Appendix 3.

Factor 5: "Need for Privacy"

	FEMALES		MALES	
	mean	(N)	mean	(N)
Retirees	.40	(52)	.36	(36)
Architecture students	-.73	(18)	-.07	(22)
Psychology students	-.46	(32)	.03	(16)
Teachers	-.33	(23)	-.09	(14)
Chemistry students	-.09	(14)	-.01	(12)
Lighting engineers	—	—	-.07	(16)
Young	-.41	(43)	-.04	(20)
Middle	-.44	(52)	-.19	(55)
Older	.37	(61)	.43	(73)

Factor 6: "Environmental Trust" *

	FEMALES		MALES	
	mean	(N)	mean	(N)
Retirees	-.88	(52)	-.18	(63)
Architecture students	-.10	(18)	.19	(22)
Psychology students	.49	(32)	.35	(16)
Teachers	.31	(23)	.25	(14)
Chemistry students	.31	(14)	.48	(12)
Lighting engineers	—	—	.94	(16)
Young	.14	(43)	.48	(20)
Middle	.36	(52)	.48	(55)
Older	-.87	(61)	-.20	(73)

* The mathematical signs for these values were reversed to fit with the concept of the factor, i.e. negative value means less trust, positive means more trust.

Appendix 4. *Mean factor scores for the retirees subsample (total N=115).*

		URBAN		RURAL	
		Better adjusted	Less well adjusted	Better adjusted	Less well adjusted
1. Stimulus seeking	Females	-1.12 (N=9)	-.68 (N=18)	-.72 (N=15)	-.28 (N=10)
	Males	-.57 (N=24)	.01 (N=13)	-.29 (N=19)	-.19 (N=7)
2. Urbanism	Females	.45	.35	-.70	-.63
	Males	.35	.14	-.85	-1.08
3. Antiquaria- nism	Females	.22	-.01	.12	.02
	Males	-.42	-.66	-.35	-.36
4. Mechanical orientation	Females	-.39	-.44	-.47	-.25
	Males	.33	.55	.75	.25
5. Need for privacy	Females	.43	.38	.07	.93
	Males	.29	.82	.16	.34
6. Environmen- tal trust	Females	-.23	-1.10	-.86	-1.12
	Males	.20	-.36	-.38	-.60

Appendix 3. *Cell means of groups' factor scores.*

Factor 1: "Stimulus Seeking"

	FEMALES		MALES	
	mean	(N)	mean	(N)
Retirees	-.69	(52)	-.32	(63)
Architecture students	.57	(18)	.46	(22)
Psychology students	.44	(32)	.53	(16)
Teachers	.11	(23)	.18	(14)
Chemistry students	.11	(14)	.52	(12)
Lighting engineers	—	—	.20	(16)
Young	.46	(43)	.56	(20)
Middle	.28	(52)	.39	(55)
Older	-.71	(61)	-.31	(73)

Factor 2: "Urbanism"

	FEMALES		MALES	
	mean	(N)	mean	(N)
Retirees	-.12	(52)	-.21	(63)
Architecture students	.62	(18)	.52	(22)
Psychology students	.08	(32)	.12	(16)
Teachers	-.16	(23)	-.36	(14)
Chemistry students	-.22	(14)	.30	(12)
Lighting engineers	—	—	-.39	(16)
Young	.11	(43)	.44	(20)
Middle	.11	(52)	-.07	(55)
Older	-.09	(61)	-.19	(73)

Appendix 3.

Factor 3: "Antiquarianism"

	FEMALES		MALES	
	mean	(N)	mean	(N)
Retirees	.07	(52)	-.44	(63)
Architecture students	.64	(18)	.00	(22)
Psychology students	.56	(32)	.00	(16)
Teachers	.18	(23)	-.01	(14)
Chemistry students	.36	(14)	-.76	(12)
Lighting engineers	—	—	-.58	(16)
Young	.24	(43)	-.35	(20)
Middle	.51	(52)	-.19	(55)
Older	.19	(61)	-.45	(73)

Factor 4: "Mechanical Orientation"

	FEMALES		MALES	
	mean	(N)	mean	(N)
Retirees	-.40	(52)	.49	(63)
Architecture students	-.12	(18)	.45	(22)
Psychology students	-.55	(32)	-.01	(16)
Teachers	-.47	(23)	.45	(14)
Chemistry students	-.10	(14)	-.03	(12)
Lighting engineers	—	—	.70	(16)
Young	-.39	(43)	-.05	(20)
Middle	-.36	(52)	.49	(55)
Older	-.39	(61)	.42	(73)

Appendix 3.

Factor 5: "Need for Privacy"

	FEMALES		MALES	
	mean	(N)	mean	(N)
Retirees	.40	(52)	.36	(36)
Architecture students	-.73	(18)	-.07	(22)
Psychology students	-.46	(32)	.03	(16)
Teachers	-.33	(23)	-.09	(14)
Chemistry students	-.09	(14)	-.01	(12)
Lighting engineers	—	—	-.07	(16)
Young	-.41	(43)	-.04	(20)
Middle	-.44	(52)	-.19	(55)
Older	.37	(61)	.43	(73)

Factor 6: "Environmental Trust" *

	FEMALES		MALES	
	mean	(N)	mean	(N)
Retirees	-.88	(52)	-.18	(63)
Architecture students	-.10	(18)	.19	(22)
Psychology students	.49	(32)	.35	(16)
Teachers	.31	(23)	.25	(14)
Chemistry students	.31	(14)	.48	(12)
Lighting engineers	—	—	.94	(16)
Young	.14	(43)	.48	(20)
Middle	.36	(52)	.48	(55)
Older	-.87	(61)	-.20	(73)

* The mathematical signs for these values were reversed to fit with the concept of the factor, i.e. negative value means less trust, positive means more trust.

Appendix 4. *Mean factor scores for the retirees subsample (total N=115).*

		URBAN		RURAL	
		Better adjusted	Less well adjusted	Better adjusted	Less well adjusted
1. Stimulus seeking	Females	-1.12 (N=9)	-.68 (N=18)	-.72 (N=15)	-.28 (N=10)
	Males	-.57 (N=24)	.01 (N=13)	-.29 (N=19)	-.19 (N=7)
2. Urbanism	Females	.45	.35	-.70	-.63
	Males	.35	.14	-.85	-1.08
3. Antiquaria- nism	Females	.22	-.01	.12	.02
	Males	-.42	-.66	-.35	-.36
4. Mechanical orientation	Females	-.39	-.44	-.47	-.25
	Males	.33	.55	.75	.25
5. Need for privacy	Females	.43	.38	.07	.93
	Males	.29	.82	.16	.34
6. Environmen- tal trust	Females	-.23	-1.10	-.86	-1.12
	Males	.20	-.36	-.38	-.60

Appendix 5. *Items comprising the adjustment criterion. The factor loadings for each item appears to the right. Each subject was given a ranking in adjustment based on their factor score for the 21 items (Küller, forthcoming, Watzke 1986).*

1. Health composite (A medical form checklist - Are you bothered by headaches, anxiety, indigestion, etc.)	.64
2. Have you felt (for the most part) sad or happy in recent times?	.63
3. Have you felt (for the most part) anxious or secure in recent times?	.62
4. Have you felt (for the most part) rested or tired in recent times?	.58
5. Are you satisfied with your existence as it is today?	.53
6. Have you felt (for the most part) unproductive or effective in recent times?	.52
7. Have you felt (for the most part) unsure or self-certain in recent times?	.51
8. Do you often feel lonely?	.51
9. To be older, is it better or worse than you expected?	.50
10. Do you feel any types of insecurity in becoming older?	.49
11. Are you worried that someday you will be sick and not able to care for your self?	.47
12. Do you often feel that no one needs you?	.47
13. How do you describe your general health relative to others in your age?	.41
14. Are you easily irritated?	.40
15. Do you think you feel older or younger than your peers?	.36
16. Was it hard to pass the time right after retirement?	.34
17. Do you regret not having made more of your life?	.33
18. Do you usually have troubles falling asleep at night?	.33
19. Do you think the people in your living area feel lonely and isolated?	.33
20. Activities composite; A checklist of activities, e.g., going to a restaurant, a movie, etc., participated in during the last 6 months.	.31
21. Do you want to live in your present area the rest of your life?	.30

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